INTERNATIONAL SEARCH REPORT

National Application No
PCT/DK2004/000743

A. CLASSIFICATION OF SUBJECT MATTER
IPC 7 F17D3/10 F16K1/44 · G01N1/20

According to International Patent Classification (IPC) or to both national classification and IPC

B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)
IPC 7 F17D F16K G01N

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)
EPO-Internal

C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
X	DE 199 57 306 A (TUCHENHAGEN GMBH) 21 December 2000 (2000-12-21) column 7, line 26 - column 8, line 60; figures 1,2	1-6
X	US 6 056 003 A (MADSEN KARSTEN SCHACK ET AL) 2 May 2000 (2000-05-02)	1-3
A	column 4, line 61 - column 8, line 58; figures	4,5
A	EP 1 169 590 A (OSTERGAARD MASKINFABRIK AS) 9 January 2002 (2002-01-09) cited in the application the whole document	1,2
A	US 5 246 204 A (OTTUNG KAI) 21 September 1993 (1993-09-21) cited in the application the whole document	1,6

☐ Further documents are listed in the continuation of box C.

☒ Patent family members are listed in annex.

° Special categories of cited documents :

"A" document defining the general state of the art which is not considered to be of particular relevance

"E" earlier document but published on or after the international filing date

"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)

"O" document referring to an oral disclosure, use, exhibition or other means

"P" document published prior to the international filing date but later than the priority date claimed

"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention

"X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone

"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art.

"&" document member of the same patent family

Date of the actual completion of the international search	Date of mailing of the international search report
18 January 2005	26/01/2005

Name and mailing address of the ISA	Authorized officer
European Patent Office, P.B. 5818 Patentlaan 2 NL - 2280 HV Rijswijk Tel. (+31-70) 340-2040, Tx. 31 651 epo nl, Fax: (+31-70) 340-3016	Lanel, F-B

INTERNATIONAL SEARCH REPORT

Information on patent family members

ational Application No
/DK2004/000743

Patent document cited in search report		Publication date	Patent family member(s)		Publication date
DE 19957306	A	21-12-2000	DE	19957306 A1	21-12-2000
			AT	253699 T	15-11-2003
			DE	50004339 D1	11-12-2003
			WO	0075541 A1	14-12-2000
			EP	1181471 A1	27-02-2002
US 6056003	A	02-05-2000	CA	2258738 A1	03-12-1998
			WO	9854493 A1	03-12-1998
			AU	3169097 A	30-12-1998
			EP	0916046 A1	19-05-1999
			AT	226291 T	15-11-2002
			AU	734092 B2	07-06-2001
			DE	59708510 D1	21-11-2002
			DK	916046 T3	10-02-2003
			ES	2183182 T3	16-03-2003
			JP	2000515618 T	21-11-2000
			NZ	332927 A	28-07-2000
EP 1169590	A	09-01-2002	DK	44299 A	01-10-2000
			AT	269951 T	15-07-2004
			AU	3420200 A	23-10-2000
			DE	60011758 D1	29-07-2004
			EP	1169590 A1	09-01-2002
			US	6648006 B1	18-11-2003
			WO	0060258 A1	12-10-2000
			DK	9900161 U3	28-07-2000
			DK	1169590 T3	16-08-2004
US 5246204	A	21-09-1993	WO	9012972 A1	01-11-1990
			AT	106513 T	15-06-1994
			DE	68915785 D1	07-07-1994
			DE	68915785 T2	05-01-1995
			EP	0468957 A1	05-02-1992

PATENT COOPERATION TREATY

PCT

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

(Chapter II of the Patent Cooperation Treaty)

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference IPB/130024	**FOR FURTHER ACTION**	See Form PCT/IPEA/416
International application No. PCT/DK2004/000743	International filing date *(day/month/year)* 28.10.2004	Priority date *(day/month/year)* 28.10.2003
International Patent Classification (IPC) or national classification and IPC F17D3/10, F16K1/44, G01N1/20		
Applicant KEOFITT A/S et al.		

1. This report is the international preliminary examination report, established by this International Preliminary Examining Authority under Article 35 and transmitted to the applicant according to Article 36.
2. This REPORT consists of a total of 5 sheets, including this cover sheet.
3. This report is also accompanied by ANNEXES, comprising:
   a. ☒ *sent to the applicant and to the International Bureau)* a total of 4 sheets, as follows:
      ☒ sheets of the description, claims and/or drawings which have been amended and are the basis of this report and/or sheets containing rectifications authorized by this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions).
      ☐ sheets which supersede earlier sheets, but which this Authority considers contain an amendment that goes beyond the disclosure in the international application as filed, as indicated in item 4 of Box No. I and the Supplemental Box.
   b. ☐ *(sent to the International Bureau only)* a total of (indicate type and number of electronic carrier(s)) , containing a sequence listing and/or tables related thereto, in computer readable form only, as indicated in the Supplemental Box Relating to Sequence Listing (see Section 802 of the Administrative Instructions).

4. This report contains indications relating to the following items:

☒	Box No. I	Basis of the opinion
☐	Box No. II	Priority
☐	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
☐	Box No. IV	Lack of unity of invention
☒	Box No. V	Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
☐	Box No. VI	Certain documents cited
☐	Box No. VII	Certain defects in the international application
☐	Box No. VIII	Certain observations on the international application

Date of submission of the demand	Date of completion of this report
25.08.2005	02.11.2005
Name and mailing address of the international preliminary examining authority: European Patent Office - P.B. 5818 Patentlaan 2 NL-2280 HV Rijswijk - Pays Bas Tel. +31 70 340 - 2040 Tx: 31 651 epo nl Fax: +31 70 340 - 3016	Authorized Officer Lanel, F-B Telephone No. +31 70 340-1978

INTERNATIONAL PRELIMINARY REPORT ON PATENTABILITY

International application No.
PCT/DK2004/000743

Box No. I Basis of the report

1. With regard to the **language**, this report is based on the international application in the language in which it was filed, unless otherwise indicated under this item.

   ☐ This report is based on translations from the original language into the following language , which is the language of a translation furnished for the purposes of:
   - ☐ international search (under Rules 12.3 and 23.1(b))
   - ☐ publication of the international application (under Rule 12.4)
   - ☐ international preliminary examination (under Rules 55.2 and/or 55.3)

2. With regard to the **elements*** of the international application, this report is based on *(replacement sheets which have been furnished to the receiving Office in response to an invitation under Article 14 are referred to in this report as "originally filed" and are not annexed to this report)*:

Description, Pages

2-11	as originally filed
1, 1a	as amended (together with any statement) under Art. 19 PCT

Claims, Numbers

1-6	as amended (together with any statement) under Art. 19 PCT

Drawings, Sheets

1/2, 2/2	as originally filed

☐ a sequence listing and/or any related table(s) - see Supplemental Box Relating to Sequence Listing

3. ☐ The amendments have resulted in the cancellation of:
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

4. ☐ This report has been established as if (some of) the amendments annexed to this report and listed below had not been made, since they have been considered to go beyond the disclosure as filed, as indicated in the Supplemental Box (Rule 70.2(c)).
   - ☐ the description, pages
   - ☐ the claims, Nos.
   - ☐ the drawings, sheets/figs
   - ☐ the sequence listing *(specify)*:
   - ☐ any table(s) related to sequence listing *(specify)*:

* *If item 4 applies, some or all of these sheets may be marked "superseded."*

Box No. V Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Yes:	Claims	4-6
	No:	Claims	1-3
Inventive step (IS)	Yes:	Claims	
	No:	Claims	1-6
Industrial applicability (IA)	Yes:	Claims	1-6
	No:	Claims	

2. Citations and explanations (Rule 70.7):

see separate sheet

Re Item V.

1 The following document is referred to in this communication:

D1: DE 199 57 306 A (TUCHENHAGEN GMBH) 21 December 2000 (2000-12-21)

D2: US-A-6 056 003 (MADSEN KARSTEN SCHACK ET AL) 2 May 2000 (2000-05-02)

2 INDEPENDENT CLAIM 1

2.1 The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claim 1 is not new in the sense of Article 33(2) PCT. Document D2 discloses (the references in parentheses applying to this document):

A sampling valve placeable on a container (for example via branch line (7)) suitable for sterile sampling of a liquid sample from a container, comprising a valve body (1) with a valve chamber (5), a sample inlet (6) in the valve chamber (5) surrounded by a first valve seat (12), a first valve plug (9) for closing the sample inlet (6) through abutment against the first valve seat (12), an outlet (40, 36) from the valve chamber (5), a cleaning inlet (2) in the valve chamber (5) for disinfection fluid, a second valve seat (11) and a second valve plug (8), the two valve plugs (8, 9) being mutually independently moveable between opened and closed positions, wherein the outlet (40, 36) is positioned between the two valve seats (8, 9), and wherein the second valve seat (11) and the second valve plug (8) are positioned in such a manner that the second valve plug (8) through abutment against the second valve seat (11) cuts off the inflow of disinfection fluid in an area of the valve chamber (5) at the outlet (40, 36).

3 DEPENDENT CLAIMS 2-6

Dependent claims 2-6 do not contain any features which, in combination with the features of any claim to which they refer, meet the requirements of the PCT in respect of novelty and/or inventive step (Article 33(2) and (3) PCT). The subject matter of dependent claims 2-5 is known from D1 and/or D2. Claim 6 relates to simple constructional features that come within the scope of the customary

practice followed by persons skilled in the art.

4 The subject matter of claims 1-6 can be made or used in industry, and thus looked upon as being industrially applicable.

A VALVE FOR STERILE SAMPLING OF A LIQUID SAMPLE FROM A CONTAINER

The present invention relates to a sampling valve placable on a container for sterile sampling of a liquid sample from a container, comprising a valve body with a valve chamber, a sample inlet in the valve chamber surrounded by a first valve seat, a first valve plug for closing the sample inlet through abutment against the first valve seat, an outlet from the valve chamber, a cleaning inlet in the valve chamber for disinfection fluid, a second valve seat and a second valve plug, the valve plugs (5a, 5b) being mutually independently moveable between opened and closed positions.

Valves of this type are among others used within the food industry for sampling samples of milk, juice, beer and the like, where there is a need for a sterile sealing valve for sampling of the samples. Such a sterile sealing is also advantageously used within for instance the pharmaceutical industry.

WO 90/12972 discloses a sampling valve with only a single valve seat. The valve seat is arranged around an axially disposed sample inlet, which is closed by displacement of a valve spindle, such that a valve spindle of rubber or a similar ductile material abuts against the valve seat. Moreover, the valve comprises an outlet, which in the mounted condition of the valve extends into the bore from below, and a cleaning inlet extending into the bore from above. As a consequence of this, the valve is adapted to be mounted in such a way in a container that its axis is substantially horizontal, for which reason

the mounting of the valve can only take place with a very small degree of freedom. The cleaning inlet is connected with a source of sterilisation fluid

C L A I M S

1. A sampling valve placable on a container for sterile sampling of a liquid sample from the container, comprising a valve body (1) with a valve chamber (2), a sample inlet (6) in the valve chamber (2) surrounded by a first valve seat (7), a first valve plug (5a) for closing the sample inlet (6) through abutment against the first valve seat (7), an outlet (8) from the valve chamber (2), a cleaning inlet (9) in the valve chamber (2) for disinfection fluid, a second valve seat (10) and a second valve plug (5b), the valve plugs (5a, 5b) being mutually independently moveable between opened and closed positions, c h a r a c t e r i z e d in that the outlet (8) is positioned between the two valve seats (7, 10), and that the second valve seat (10) and the second valve plug (5b) are positioned in such a manner that the second valve plug (5b) through abutment against the second valve seat (10) cuts off the inflow of disinfection fluid in an area (2b) of the valve chamber (2) at the outlet (8).

2. A valve according to claim 1, in which the valve chamber (2) is formed by means of an axial bore, at one end of which the sample inlet (6) is placed coaxially, the first valve plug (5a) is axially movable by displacement of a first valve spindle (4), which is coaxial to the bore, and the second valve plug (5b) is annular and surrounds the first valve spindle (4), c h a r a c t e r i z e d in that the second valve plug (5b) through abutment against the second valve seat (10) defines a cleaning chamber (2a) in the valve chamber (2).

3. A valve according to claim 2, in which a sec-

ond, hollow valve spindle (3) is provided, said spindle surrounding the first valve spindle (4) coaxially, and in which the first valve plug (5a) by displacement of the first valve spindle (4) into abutment against the first valve seat (7) cuts off the sample inlet, c h a r a c t e r i z e d in that the second valve plug (5b) by displacement of the second valve spindle (3) into abutment against the second valve seat (10) cuts off the connection between the cleaning inlet (9) and the outlet (8).

4. A valve according to one of the claims 1 to 3, c h a r a c t e r i z e d in that the exterior of the valve plugs (5a, 5b) is formed by a single flexible member (5).

5. A valve according to claim 4, c h a r a c t e r i z e d in that the flexible member (5) comprises a bellows of a substantially not ductile material.

6. A valve according to one of the claims 1 to 5, c h a r a c t e r i z e d in that the outlet (8) from a mouth (8a) in the valve chamber (2), bordering on the second valve seat (10), extends away from an end of the valve body (1), in which the sample inlet (6) is positioned.